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THE DEVELOPMENT OF CHRYSOTILE IN SOUTHERN RHODESIA

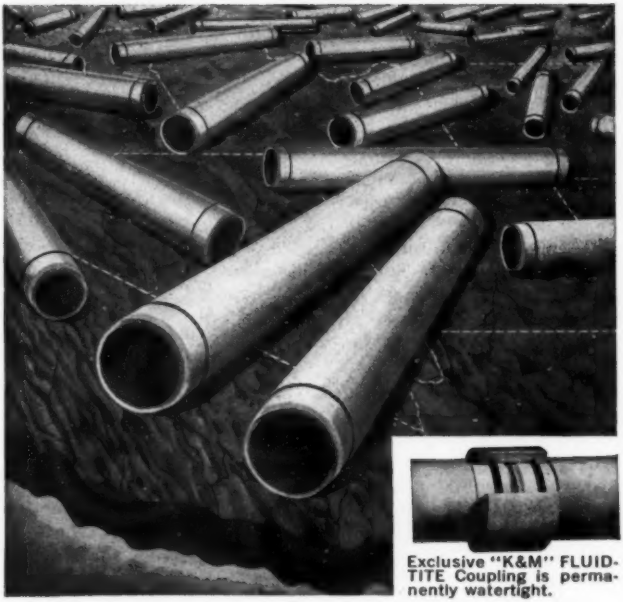
By: W. E. Sinclair, M.I.M.M.

In a recent article it was noted that chrysotile asbestos was first discovered in South Africa in 1896* and the earliest production in 1906. It was in this year (1906) that the discovery of chrysotile was reported in Southern Rhodesia, when samples from the Mashaba district (about 25 miles west of Fort Victoria) were sent to Bulawayo for examination. Confirmation of the commercial value of the asbestos in the samples was instrumental in the pegging of claims, where the asbestos had been disclosed in serpentine rocks on ground that was ultimately the site of Gaths Mine. It was here that the earliest mining accounted for the first officially recorded asbestos output in 1908. This amounted to 55 tons of crude hand-cobbed chrysotile which was valued at the modest sum of £550, or £10. per ton. Even in those days of relatively low values, it is almost certain that this return was far from encouraging, a fact that was reflected in the cessation of all further production till 1914.

However, the interim period was employed in developing the original find and in examining the neighboring serpentine outcrops, with the result that in 1912 further claims were pegged on what was later to be the King Mine. Production followed on both these properties.

Meantime, prospecting further afield disclosed, some thirty-five miles further west, even more substantial deposits containing a greater and better concentration of asbestos. There followed, in 1914 to 1916, some rapid developments in this district which was eventually known as the Shabani area and proved to be the most important field in the country.

It is rather surprising that the original discoveries were not made in this area since it is here that the maximum development of serpentine bodies exist. These large lenticular masses, surrounded by gneiss-granite instrusions, form well defined ore-bodies containing asbestos of superior quality. By contrast, the Mashaba bodies are smaller and somewhat scattered in granite country, and the fibre is inclined to be harsh compared with the Shabani occurrences.



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Further prospecting, following the opening up of the Shabani area, revealed the extension of the main belt for nearly 150 miles south west of Fort Victoria, and, as time went on, new discoveries of scattered deposits were made at several places along the formation. The most important of these, it is now known, proved to be in the Belingwe and Filabusi areas. Many other minor occurrences were found at scattered points and also in the serpentine rocks adjacent to the Great Dyke, a prominent geological feature, responsible, to some extent, for the chrome and chrysotile occurences along its 300 mile strike. However, the asbestos finds in the vicinity of the Dyke have not proved to be extensive but rather erratically disposed. Some of these deposits have been worked spasmodically, and now, only one of any substance (the Ethel Mine at Lomagundi) is producing today.

In the light of developments in the Industry, in the past fifty years, it is evident that the Shabani and Mashaba occurrences take precedence over all the known formations, proved by the contribution from these fields of 90% of the country's output. Also, it is safe to say that 90% of the country's future resources are in these areas.

While prospecting proceeded far and wide, the developing mines in the Shabani and Mashaba fields were busy producing. The first output from the Shabani Mine in 1916 was reported as 94 tons valued at £1503. The following year the output from the Mashaba workings was 3,503 tons valued at £55,622.

In spite of the increased production, however, the low price (about £16 per ton) caused producers to express dissatisfaction. In response, manufacturers explained that the milled condition of the asbestos received could not command a higher price, indeed, they complained that the fibre was too harshly treated and was dirty.

To overcome these complaints producers immediately tackled the milling problem, but, because of the tender and silky texture of the asbestos, it took over five years of tests and experiments in different treatment processes before a satisfactory method was evolved which, in the local class of ore, avoided attritional damage or degradation of the fibre.

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Besides the crucial problem of recovering fibre that was absolutely free of cognate or extraneous matter, there was the vital question of extracting all the fibre contained in the rock, or, at least, a payable quantity. The solving of this question was, in fact, the salvation of several propositions that might otherwise have found their efforts uneconomic. Maximum fibre extraction was, indeed, the most important aspect of economic production because few Rhodesian deposits can be classed as high grade propositions. Actually very few orebodies carry a fibre content above 3% while many are lower in value which, in the case of small deposits constitute marginal projects of doubtful economic worth, and the great majority of the country's deposits are small. Ore containing plus 1% fibre is actually worked on large scale operations, but the profit margin is almost infinitesimal. Compared with Canadian ore values, which average about 5%, the Rhodesian operations are obviously commendable.

To revert to the milling experiments, the problem proved so acute that at one stage, suggestions were made that Canadian engineers (who had been producing chrysotile for 40 years) might be consulted. This, however, was not done, instead, more intensive practical and critical trials were continued and these eventually proved successful. It seems now, that Canadian methods may not have proved as effective, a fact that is suggested by the recent disclosure that such exceptional success was obtained at the Temeraire Mine in Mashaba, that Johns-Manville decided to ship two similar pilot plants to Canada to see whether the results would be as successful treating Canadian ore.

It followed that no matter how perfect the milling and extraction results are, the question of grading the fibre to standard classified grades must be part of the whole. After some years of further experimenting this problem was also solved satisfactorily and several mills, having overcome these difficulties, were operating and producing clean graded fibre.

Although milling problems proved a costly deterrent to the original development of the mines, it happened to be a fortunate thing that mining presented no serious obstacles. The ore-bodies generally proved entirely suitable

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for open cut operations and it was only in the case of the larger mines, as for example Shabanie, that underground methods were ultimately employed. However, even today, these mines are planning extensive stripping operations to expose the extension of their proved ore reserves for surface exploitation.

During the period 1920 to 1930, when the success of the Industry was assured, buying and selling of asbestos claims and partly developed or operating mines, resulted in the amalgamation of many small holdings. Also, simultaneously there took place the merging of several interests under the control of substantial groups. One of the original is the Rhodesian General Asbestos Corporation Limited (Turner Newall Limited), who, today, produce 77% of the country's total output. This amounted to 77,883 tons in 1958. One-third of this total came from the original Mashaba Mines, Gaths and King, and the balance from the Shabanie and Nil Desperandum Mines in the Shabani field. The Croft Mine Filabusi (under the same control), produced 3,224 tons. In the same year (1958) this Group purchased the Temeraire and Shamala Mines from Rhodesian Asbestos (Johns-Manville Group), whose output was 14,385 tons.

The second important group today is the Schmidheiny (Swiss Group), which produced 12,662 tons of fibre in 1958 from the Boss Mine, Serpentine and Pangani Mines in the Mashaba-Shabani areas. The next group, Ross McIntyre &Co., produced a total of 6,240 tons in the same period from the D.S.O., Murie, Rosey Cross and Bluebird mines in the Mashaba area and the Gurumba-Tumba, Regal and Slip mines in the Belingwe-Shabani areas.

Eight mines, opearted by smaller independent concerns, producing from 20 to 300 tons a month, making a total of 9,900 tons in 1958, accounted for the grand total: 124,386 tons valued at £8,435,885, (£67.8 per ton). This reflects a slight decrease as compared with 1957, when the total output was 132,124 tons valued at over nine-million pounds.

It is suggested that this drop in output was due to the American recession in 1958, but it is more likely the result of a number of small producers having closed down owing

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to high working costs and marketing difficulties. Most of the more substantial and steady producers have their own factories or otherwise work on a fixed mine to factory contract basis.

The high quality and low iron content of the Rhodesian chrysotile will always command a steady sales value, and as prices rise with an increasing demand, the ultimate exploitation of the country's resources is assured, notwithstanding the diminutive nature of so many of the known deposits.

* "The Development of Chrysotile Asbestos in South Africa", by the author. "ASBESTOS", August 1959.

The AMERICAN SOCIETY FOR TESTING MATERIALS recently announced that the 1959 Supplements to its 1958 Book of ASTM Standards have been completed. Each Part-supplement brings up-to-date the corresponding Part of the 1958 Book of Standards by including new standards and revisions adopted in 1959.

The Book of ASTM Standards is published triennially with Supplements in the intervening years. Industry, government and commerce are thus supplied with a continuing source of reliable, authoritative, unbiased, and widely-applicable standards. The Book and Supplements contain well over 2,600 standard specifications, methods of test, recommended practices and definitions of terms for materials. Used throughout the world, the Book of Standards and its supplements are a testimony to the work of the many individuals who serve on the Society's more than 80 technical committees, and to industry which gives support to the work.

Part 5.—*Masonry Products, Ceramics, Thermal Insulation, Acoustical Materials, Sandwich and Building Constructions, Fire Tests*—218 pages. Includes 36 standards for asbestos-cement products, manufactured masonry units, pipe and drain tile, refractories, porcelain enamel, glass, thermal insulating materials, as well as tests for building constructions and fire tests.

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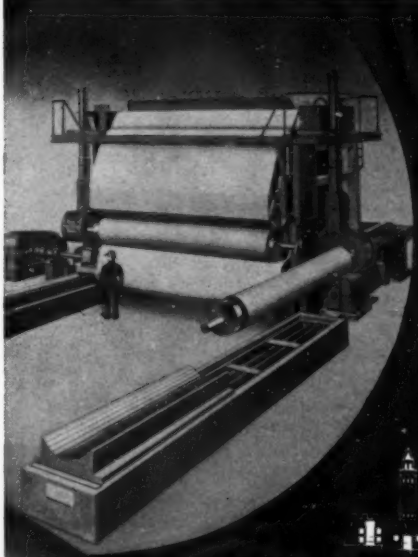

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FELT INSTALLATION AND ITS IMPORTANCE TO ASBESTOS-CEMENT MACHINE OPERATION

By: P. T. Gates, Service Engineer
Albany Felt Company, Albany, N. Y.

The proper installation of a felt on an asbestos-cement machine is far more important than would first appear and the operation deserves more care and attention than it normally receives. Careless handling and faulty installation will definitely shorten felt life and affect product quality. In the following discussion, then, we wish to point out some of the more common mistakes made and the subsequent operating troubles which frequently result.

Bruises . . . Care must be taken to avoid any bruising of the felt during installation by pinching it between the bearings and the frame of the machine. Such bruises generally do not make holes, but they do leave weakened spots which are almost certain to develop into holes some hours or days later.

Similarly, felts should not be stepped on, even though supported by a roll, vacuum box or cylinder. Bruises and weak spots may result. Further, if anyone steps or stands on a felt where it is unsupported, it would be best to take the felt off and junk it, then and there. It will surely develop weakened or baggy areas in a very short time.

The place where felts are stepped on and damaged most frequently is in the pit of the cleaning area. Here, where the felt may be hanging slack, but not touching the floor, it is not uncommon to see the men who are putting it on, step on or walk across the felt.

Grease Spots . . . Obviously, every possible care should be taken to prevent rease from getting on a felt during installation or in subsequent operation. Any grease spots that are found on a felt should be removed with a good grease solvent.

In doing so, the spot should be cleaned not only on the surface but through the felt too. This can best be done—after the surface has been cleaned—by holding an absorbent cloth under the spot and pouring some of the solvent through the felt. Kerosene, which is often used for this purpose, it not good because it leaves a certain amount

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of oil behind in the felt. It is better to use a good solvent type detergent which contains enough emulsifier so that it can be used in a water medium. Some of these are:

Solvalent —Socony-Mobile
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Orthosolv —Solvay Process Division of Allied Chemical & Dye Co., 61 Broadway, New York, N.Y.

It is not good practice to depend on the whipper, showers and vacuum boxes to clean up grease spots. Any oil or grease in the felt will quickly collect dirt from the sheet. This dirt will soon fill or partially fill the local area. The spot may eventually clear itself, but in the meantime may give considerable trouble.

Uniform Tension . . . The important relationship between proper felt installation and maximum felt performance is uniform tension. Its importance cannot be overemphasized. Many complaints about poor drainage and cleaning characteristics may be traced directly to careless installation and start-up techniques. To run with maximum efficiency, a felt must be absolutely square, with uniform tension before start-up. To do this, we recommend the following felt installation procedure.

Once the felt is on the machine, smoothed out and all rolls are in place except the last couch (the latter is usually in the "up" position), the blue marker line should be squared as accurately as possible with the drive roll and the felt smoothed across its face. If the accumulator roll is then lowered, it will hold the felt in proper alignment at that point. The jack or take-up roll should then be set in its shortest position and parallel with the drive roll. The guide roll also should be put in its neutral position. All couches except the last one (which is in the up position, as mentioned before) should be blocked up enough so that they do not touch the cylinders. The felt is now ready to have the back couch lowered to a point a few inches clear of the cylinder.

At this point in the operation, the operators should be very careful to see that the felt, from the nip of the drive roll back to the back couch is at an even tension *all the way across* the felt. If the middle of the felt or one side is

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tight, that area should be slipped around the couch to equalize its tension with that of the rest of the felt. This operation is very important and deserves careful attention.

When felt tension has been equalized and all couches are still clear of the cylinder, the jack roll should be taken up very evenly from both sides at once until the felt is snug all around the machine. Then all the couches may be unblocked and lowered onto the cylinders. If the above procedure is carefully followed, the felt should be on the machine square and ready to go.

No doubt this procedure sounds unnecessarily cautious, but as felt manufacturers, we do not feel so. In making felts, we take the greatest possible care to keep the warp (lengthwise yarns) tensions uniform throughout the felt and the blue lines straight across it. That is the way a felt is supposed to run on a machine in order to give best results. But to run that way, it must start that way!

To illustrate the importance of taking special care while installing a felt on a machine, let us consider an exaggerated case of a careless installation. Assume the blue or guide line is more or less straight at the drive roll and the accumulator roll is down. The felt is on the machine and spread out, the couches, except the last one, are down on the cylinders instead of being blocked up and no particular attention has been given to the evenness of the slack felt.

Also assume that when the back couch is lowered into position, the felt is fairly snug across the top of the machine on one side, but it is bellying down slack on the other side. Now the jack is tightened up and the machine started. What is going to happen?

The drive roll pulls the felt with a straight line nip. The couches all hold the felt back—also with a straight line nip. How then, is the slack side of the felt going to "catch up" with the tight side? Obviously it can't.

What will happen is that the tight side will be severely stretched, since it will be pulling most of the load of the machine. As that side stretches, the slack side begins to tighten up, the guide roll will have to work hard to keep the felt on the machine and the operators will try to help out by cocking the jack roll. They may finally get the felt to run and stay on the machine, but it is no longer the

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same felt that was made for the machine. It has been badly distorted in the first few minutes of operation. From then on, it will be almost impossible to maintain anything like a straight blue line on the felt, to say nothing of even drainage and uniform cleaning.

That, as we indicated, is an exaggerated picture, but it applies to a lesser degree to any felt which is not put on the machine straight with the felt under uniform tension. That is why we believe a little extra effort, care and time taken for the proper installation of the felt will more than pay for itself in improved performance and better product quality.

R. M. WAPLES RETIRES
Garlock Packing Company

R. M. Waples, Chairman of the Board of Garlock Packing Company, announced his retirement from active service at the regular meeting of the Board of Directors held in Palmyra, New York. The retirement became effective immediately after the annual meeting of the Company's stockholders on Wednesday, April 6, 1960.

During his forty years service with the mechanical packing company, Mr. Waples advanced from a file clerk to Chairman of the Board. He is sixty-six years old and had previously served as President from August 10, 1955, until January 8, 1959.

He is not resigning as a member of the Board of Directors. Following the board meeting, Garlock President, A. J. McMullen, stated that the Board of Directors accepted the decision to retire "with regret". He said the directors did not anticipate filling the office of Chairman when Mr. Waples retires. The retiring Chairman first joined the Company in 1915 as a file clerk with the Philadelphia district sales office. Following his return from service in World War I, he became a Garlock sales representative with the Baltimore sales office.

He was appointed Manager of the Service Department at Palmyra in 1927, elected Company Secretary in 1929, elected Vice-President in 1948, Executive Vice-President in 1952, and President in 1955.

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PROFILE—I. J. HARVEY, JR. THE FLINTKOTE COMPANY

I. J. Harvey, Jr.

I. J. Harvey, Jr., Chairman of the Board and Chief Executive Officer of The Flintkote Company, began his business career as an oil field "roustabout" with the Shell Oil Company after having served as an Army flier in World War I. He received an education in Engineering at the University of California. Following a broad experience in general sales work and the development of new territories, he was made General Sales Manager of Shell Oil Company in 1928 .

In 1930, he was transferred from Shell-London to Flintkote as a Vice President in charge of its road activities and subsequently was given the responsibility for all sales activities. In 1934, he was elected President and a Director and in 1957 was elected Chairman of the Board of Directors. Under his direction, the business of the Company has been diversified, and sales and assets increased substantially.

Mr. Harvey is also a member of the Executive and Finance Committees of Flintkote and is a Director of several large companies: among them, Lehman Corporation; Sperry Rand Corporation; Irving Trust Company; and, Shell Caribbean Petroleum Company.

During World War II, he served as a member of the Chemical Warfare Services Advisory Board of the U.S. Army and is at present a Director of Children's Village, Dobbs Ferry, New York.

GREENE, TWEED & COMPANY recently published a catalog and price list describing and illustrating the Palmetto line of gasketing and gaskets for flanges, joints, boiler manholes, furnace doors, and similar applications.

Catalog and engineering service information can be procured from Greene, Tweed & Company, North Wales, Pennsylvania.

For faster service to asbestos users in the Southern market, National Gypsum Company has appointed a new distributor: Barada & Page Co., branch of McKesson & Robbins, Inc., New Orleans 18, Louisiana.

Barada & Page will distribute in Alabama, Mississippi, Louisiana and part of Arkansas (see map).

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MURRAY MINING CORPORATION LIMITED

Asbestos Project

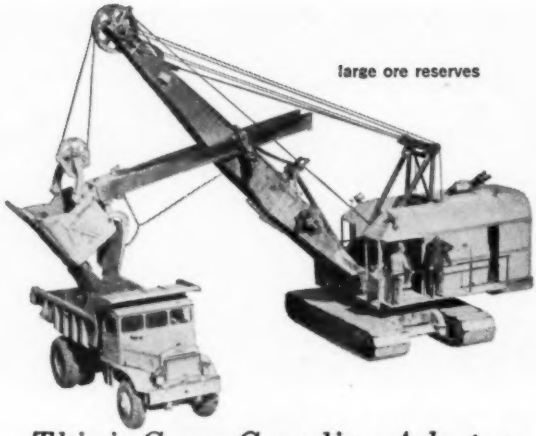
Murray Mining Corporation Limited, a Canadian exploration company, recently announced a new, major discovery of asbestos in the Northern Ungava region of Quebec. The area being explored is held under an exploration permit issued by the Province of Quebec and is some 30 miles south of Deception Bay on Hudson Strait.

During the past season approximately 4,000 feet of diamond drilling indicated the presence of 3,500,000 tons of asbestos ore averaging about $20.00 per ton at 1959 prices while an additional 3,500,000 tons is classed as inferred ore.

The Quebec Department of Mines, who have recently opened a modern one-million dollar ore testing laboratory, have mill tested the diamond drill cores. The results of these tests indicate that there is approximately 12% fibre in the ore and that this fibre falls chiefly into groups 4 and 5 plus some shorts. Further special tests such as maximum potential, strength unit and magnetic rating have been carried out by several asbestos producers. These tests indicate that the quality of the fibre equals or exceeds that of the southern Quebec producing area.

A more extensive programme is planned for the 1960 season, Mr. Murray Watts, President, states in the Company's Annual Report. Over 20,000 feet of diamond drilling, driving of an adit across the ore zone, further mapping and geophysical work and preliminary engineering studies are to be included. Based upon the results to-date it is fully expected that additional tonnages of ore will be established. Nine to ten million tons would be considered adequate to justify long-term production planning at a rate of 2,000 tons per day. Semi-permanent camps are already established on the property and 200 tons of supplies were delivered to the sea coast last autumn by ship, so that all is in readiness for an early start this spring.

Exploration results to-date indicate that the project will be entirely feasible and profitable assuming that tonnage can be extended as expected. The high grade, large tonnage of ore plus the proximity of the sea for transport purposes all make the project attractive despite the rela-



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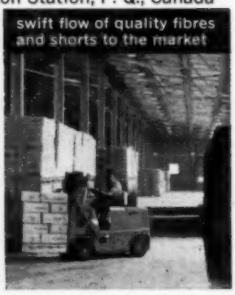
from mine, to mill, to market

Here is your dependable source for the highest quality asbestos, consistently uniform from shipment to shipment.

Complete information on Carey-Canadian Asbestos can be obtained by writing:
Carey-Canadian Mines Ltd., P. O. Box 95, Cincinnati, Ohio or
Carey-Canadian Mines Ltd., East Broughton Station, P. Q., Canada



tively remote location. A yearly production of 90 to 100,000 tons of fibre is envisaged. Fibre would be transported in ships of 10,000 ton capacity with freighting costs to Europe of $5.00 to $6.00 per ton quoted plus loading and unloading charges.

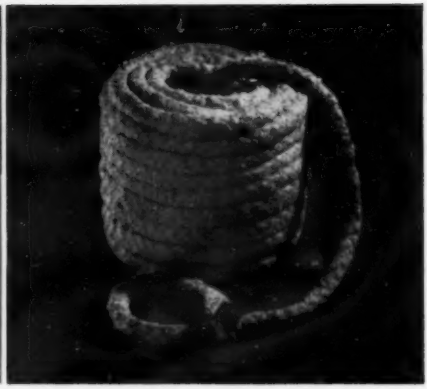
Both the Federal and Provincial governments have shown a strong interest in aiding with those auxiliary facilities which will further develop the area. It is to be noted that the well known Cape Smith-Wakehan Bay nickel belt lies only ten miles south of the asbestos find and that development of transportation in the area will make these known mineral prospects very attractive. Financial assistance for the building of roads, eskimo accommodations, airstrip, docks and communications will help make living and operating conditions reasonably competitive with more southerly mining areas. A further feature is that serious consideration is being given to employing atomic energy to supply power and heat.

It is expected that most of the fibre produced would be sold in Europe and other overseas markets. In this regard discussions are now being held with important European consumers and financial interests. Preliminary estimates indicate that the capital cost of bringing the property into production will approximate $35 to $40 million including possible government expenditures.

The Honourable W. M. Cottingham, Minister of Mines, Province of Quebec, in a recent announcement on the project stated "That new reserves should have been discovered in Ungava stresses a point often overlooked, that New Quebec is not only rich in iron ore, it has tremendous possibilities in a wide variety of minerals".

Electron Micrographs of Asbestiform Minerals, by Charles W. Huggins, U. S. Bureau of Mines Report of Investigation No. 5551—14 pp., 24 figs., contains a representative group of electron micrographs of natural inorganic fibers, commonly referred to as the asbestiform minerals, that have industrial value.

Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.—Price 20¢.



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200 Bloor Street East • Toronto, Ont. • Canada

Subsidiaries of The Cape Asbestos Co. Ltd., London

CANADIAN ASBESTOS—1959

By: H. M. Woodrooffe (Senior Scientific Officer, Mineral Processing Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Canada).

An increase of 15% in exports of Canadian asbestos reflected a strengthening of the world market for this commodity during 1959 as near-normal buying was resumed by consuming industries. The value of mine shipments exceeded $106 million, an increase of more than 15% and an all-time high. Volume of shipments was only 21,000 tons below the record of four years ago, according to statistics released by the Dominion Bureau of Statistics.

Although an improvement in demand was noted in most grades it was particularly evident in Groups 5 and 6. To supply the demand, shipments of these increased by 33% and 22%, respectively. The shutdown in the United States steel industry affected the fibre market, particularly for the textile grades. This industry is one of the large consumers of textile cloth in the form of heat-protective clothing. In "shorts" (Group 7) producers have experienced difficulty in supplying the demand. In the United States this group was in short supply during the latter part of the year. An important factor in this market is floor tile manufacturing. Vinyl-asbestos tile is growing in popularity and sales were 50% above those of 1958.

In a normal year, nearly 200,000 tons of asbestos fibre are shipped through the port of Quebec during the navigational period. This winter two shipping companies have sceduled six to eight cargo sailings for overseas ports. Year-around sailings from Quebec should benefit the industry in supplying overseas markets.

One of the major developments in the asbestos industry was the decision by Canadian Johns-Manville Company to expand its open pit at Asbestos, Quebec. Over the past several years the Jeffrey mine has been developed into one of the two largest block-caving underground operations in this country. Within the next two to three years it is planned to supply mill feed entirely from open-pit workings and close down the underground mine. Changing economic conditions and techniques have made this transition feasible. The present pit limits are being enlarged requiring the

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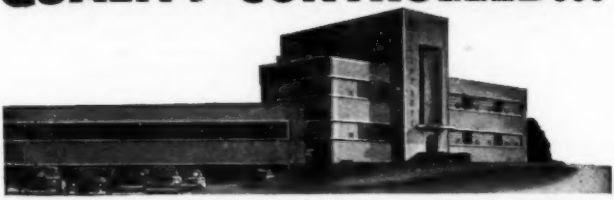

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A wide variety of asbestos fibres now available for *your* use.

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FLINTKOTE MINES, LIMITED

(Subsidiary of The Flintkote Company) Thetford Mines, P. Q., Canada

stripping of 12,000,000 cubic yards of overburden. An interesting feature of the operation will be the use of inclined skipways to complement truck haulage in raising ore to the milling plant. When fully developed, the pit is expected to be able to handle 30,000 tons of asbestos rock, and 12,000 tons of waste daily.

Advocate Mines Limited made significant progress in exploration and development of its property near Baie Verte on the Burlington Peninsula in Newfoundland. According to recent reports a testing plant placed in operation during October has processed drill core and asbestos-bearing material from underground development workings. The fibre recovered during this operation has been shipped to plants in the United States and Europe for further testing. Canadian Johns-Manville Company, Amet Corporation Incorporated, Patino of Canada, and Financiere Belge de L'Asbest-Ciment S.A. have participated financially with Canadian Johns-Manville Company managing operations.

Cassiar Asbestos Corporation Limited recently increased the capacity of its mill in northern British Columbia by 50% to 1,500 tons daily.

Exploration of Chrysotile occurrences in the Northern Ungava region of Quebec was continued by Murray Mining Corporation Limited. The company has a 50-square mile concession, 30 miles from tidewater, Deception Bay, and has a programme in progress to assess the commercial possibilities of four asbestos-bearing zones.

Reprinted from the Canadian Mining Journal, February 1960.

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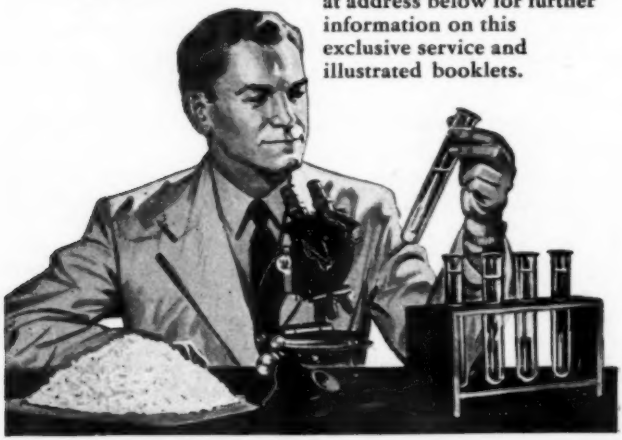

Asbestos Fibre Division

Canadian Johns-Manville Co., Ltd.

Asbestos P.Q., Canada; Telephone: Asbestos 100

At the Annual Meeting of the *Asbestos Contractors New England Association* held recently in Boston, Massachusetts, it was voted to change the name of the organization to the ASBESTOS CONTRACTORS BOSTON ASSOCIATION.

The following officers and committees were elected for 1960: President—John J. Roper of Armstrong Contracting and Supply Corporation; Secretary-Treasurer—Roger S. Roscoe of New England Insulation Company; Executive Committee—John W. Black of Thermal Insulation Company, Theodore H. Brodie of N. E. Insulation Company, William B. Wilkes of P. S. Thorsen Company of Massachusetts and Olaf M. Johnsen, of Olaf M. Johnsen Company as Alternate; Pension Committee—Albert L. Sargent of Philip Carey Manufacturing Company, William A. Slade, Jr. of P. S. Thorsen Company of Massachusetts, Chester R. Anderson of Eckel Corporation; Welfare Committee—Albert L. Sargent of Philip Carey Manufacturing Company, William A. Slade, Jr. of P. S. Thorsen Company and Ralph H .Ward, Jr. of Eastern Refractories Company, Inc.; and, Joint Trade Board—same as Executive Committee.

Leading fire protection authorities from all over the world will meet in Montreal in May to discuss how to make people and their property safer from fire.

Topics ranging from industrial plant protection and fire department equipment to school fire problems and community fire safety education will be among those covered at the week-long 64th annual meeting of the NATIONAL FIRE PROTECTION ASSOCIATION.

The meeting, opening on May 16 at the Queen Elizabeth, will be the first held in this Canadian city by the internationally-recognized, non-profit organization, which has substantial Canadian representation among its 17,000 members.

It is expected to be attended by close to 2,000 persons. Speakers on the program will include fire experts from Great Britain, Germany and Japan, as well as from the United States and Canada.

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NEW - MODEL 60
SUPER GYRATORY SCREEN*

LOW HEAD ROOM—Nothing but the dust covers above the deck.

SCREEN CHANGES IN MINUTES—Panel clamping screws completely in the clear at the head end.

BALL CLEANING—Minimum blinding.

RUGGED—For very low maintenance.

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FULLY BALANCED—New revolutionary compensated balancing system.

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The designers of that industry standard line of **ASBESTOS** *machines offer the greatest advance in screening since they introduced their great gyrating screen in 1950, again to be built by Hall Machinery of Canada, Ltd.*

WE OFFER

- The most efficient layouts of our machines and processes resulting in superior mills for smaller capital investment.
- Asbestos ore evaluation and profit estimates.
- Flow sheets and matched mill design using our patented fibre extraction and fibre grading systems.
- Special machines for special asbestos problems.

* *Patented and Patents applied for*

MARKET CONDITIONS

GENERAL BUSINESS.

General business continues good but in most lines a definite levelling off has occurred, while in some such as autos and steel a slight contraction is in evidence. Total employment is still increasing but total production dropped slightly during February. Economists are, at this point, rather sharply divided as to the present state of the economy and as to future developments. This is a decided and probably healthy change from the unanimously optimistic views during the last half of 1959. At least it serves to infect notes of caution which may well prevent excesses which could lead to a really unhealthy situation. There are still many indications that, despite a shaky start, 1960 could still be an exceptionally good year for the economy as a whole.

ASBESTOS—RAW MATERIAL.

Asbestos fibre shipments for the first two months ran 6% above the same period last year.

With the anticipated general business uptrend during the current year, shipments should attain a 10% increase over 1959.

The usual increased shipping pattern is expected in April due to the opening of navigation.

ASBESTOS—MANUFACTURED GOODS.

Asbestos Textiles. The market situation at the present time for this material is good and steady improvement is expected for the rest of the year.

Asbestos Brake Lining. Both replacement business and Equipment business (sales) for this product are running well ahead of 1959 despite Industry replacement sales not being up to Industry forecasts. It is anticipated that replacement sales should run at a record level for 1960. The outlook for the rest of the year on Equipment sales depends on how much business is diverted to compact cars.

Asbestos Paper. Orders for this material are just about

the same as for last month and prices continue to remain competitive for that business which is available. An increase in volume for the remainder of 1960 is anticipated. Orders for *Asbestos Millboard* have increased somewhat and prices seem to have stabilized to a certain extent. It seems probable that 1960 will show an increase in volume of business over 1959. The present market situation for *Asbestos Saturated Paper* is good and is expected to increase during the coming months.

Asbestos Cement Products. The demand for this material is below normal as a result of the extended severe winter conditions; however, it is expected that the volume of business will show an improvement over 1959.

High Pressure Insulation. Orders for this material have slowed down considerably and prices for those jobs which are available are very competitive. Improvement is hoped for in the latter portion of the current year.

Low Pressure Insulation. Orders have slowed down considerably due to weather conditions holding up many of the projects where this material is used. It is anticipated that orders for this type of material will increase as the spring and summer months approach.

Shingles—Roofing & Siding. Weather conditions in February and March have contributed to the curtailment in buying of Asbestos Siding. It is anticipated that active buying in the second quarter of 1960 should reflect a slight increase over the same period of 1959.

Asbestos Pipes. Weather conditions throughout the country have delayed many projects using this material. The outlook for the next few months is expected to improve with the coming warmer weather.

The above comments have been made by various informed executives in the Industry. All comments are welcome.

NATIONAL GYPSUM COMPANY, on March 14th, 1960, started production at its new multi-million dollar gypsum plant in Lorain, Ohio.

KEASBEY & MATTISON COMPANY
New Pipe Plant

Ground breaking ceremonies marking the start of construction of a new, modern, multi-million dollar Keasbey & Mattison Company asbestos-cement pipe manufacturing plant were held March 25, 1960, on the 50-acre plant site at Hillsboro, Texas.

Robert R. Porter, K&M President and Board Chairman, broke ground with a "golden" shovel that was later mounted on a plaque and presented to the Hillsboro Chamber of Commerce in commemoration of the occasion.

Texas' Governor Price Daniel was the principal speaker at the ceremonies and luncheon that followed. At the luncheon, Mr. Porter stated that the new pipe plant would be one of the most modern in the industry designed to take advantage of the most advanced technological methods for producing a high quality product. The factory and office building area under roof will cover over 3 acres of a 50-acre site. The new plant will be of single-story steel frame construction with K&M Asbestos-Cement Corrugated sides combined with brick, and a flat roof. The factory will manufacture Asbestos-Cement Pressure Pipe, Irrigation Pipe, Sewer Pipe and other forms of Pipe products, for a rapidly expanding south-west market.

Asbestos-Cement Pipe is the product of two practically indestructible materials—asbestos fiber and portland cement. It cannot rust or scale and is all but impervious to soil corrosion. The bore stays smooth with the result that pumping costs are kept low and the original flow capacity is maintained. These factors, together with the low cost of installation, have resulted in its adoption for water and sewer systems by hundreds of cities and communities throughout the country.

Asbestos fiber used in the manufacture of K&M Pipe will be imported largely from Africa through the port of Houston. Cement will be obtained from local cement plants.

Its strategic location as well as availability of all utilities and labor were factors influencing K&M's selection of the Hillsboro site.

ASBESTOS MILL DESIGN

WE have consulted to:

Canadian Johns-Manville Co. Ltd.
Flintkote Mines Ltd.
The Philip Carey Co. Ltd.—Quebec Asbestos Corp.
Nicolet Asbestos Mines Ltd.
Cassiar Asbestos Corp.
United Asbestos Corporation
The Ruberoid Co.—Vermont Asbestos Mines

WE have sold the patents for the following asbestos milling machines, which are widely used in the industry:

Gyratory Screen (The Industry Standard)
Standard Vertical Fiberizer
Airswept Vertical Fiberizer
Vertical Willow
Cycopactor
And Many Others

The personnel who consult to these companies and design machines so widely used can give you —

THE BEST IN MILL DESIGN

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Dalkeith, Ontario, Canada

We offer to —

Analyse ore samples
Prepare flow sheets with matching mill design
Prepare detail design of all stages
Prepare specifications and purchase equipment
Supervise construction of milling plant
Supervise operation of milling plant
Analyse existing mill efficiency and plan improvement

and use —

Patented flow sheets
Patented grading circuits
Patented airswept rock line
Patented fibre treatment circuits
Special short fibre extraction, recovery and grading circuits.

PERSONNEL WITH OVER 35 YEARS CONTINUOUS MILL DEVELOPMENT EXPERIENCE

EDMUND R. TEUBNER, JR.
Passes Away

Edmund R. Teubner, Jr., founder and Chairman of the Board of the Philadelphia Asbestos Company, died March 1st, 1960.

Mr. Teubner was born on September 26th, 1886. After graduating from the University of Pennsylvania, he served in the U. S. Army in World War I in the European Theater.

After the war he entered the employ of the Keasbey & Mattison Company in a clerical position working up to a position as salesman. He specialized in industrial and shipyard work.

Mr. Teubner founded the Philadelphia Asbestos Company in 1921. At that time, he sold one shipyard the idea of installing heat insulation work on a cost-plus basis, and his company has held the contract continuously to the present time.

During World War II when that yard's output was increased by 850%, he found it necessary to do considerable maneuvering to secure required materials and manpower, but no ship was ever held up on account of heat insulation work.

After the war, the United States Government compiled costs on similar ship insulation construction throughout the Country and published the fact that the insulation work performed by Philadelphia Asbestos Company cost less than any other yard in the Country. On the strength of this report, the company was requested to take over the supervision of the insulation work in another very large nearby yard.

Mr. Teubner was a member of the Union League, the Stone Harbor Yacht Club, where he had a summer home, and was also very active in the United Bowmen of Philadelphia. He maintained an eleven-target range archery course through the woods on his estate at Horsham, Pennsylvania.

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ALL GRADES—ALL TYPES

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VOLKSKAS BLDG. — 76 MARKET STREET

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INDUSTRIAL SERVICE COMPANY

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ASBESTOS CEMENT MACHINERY

Our experienced engineers and machinists offer the industry entire machines built to deliver maximum production.

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BUILDING

Gains in the heavy engineering sector highlighted activity in contracts for future construction in February, F. W. Dodge Corporation, construction news and marketing specialists, reported. However, these gains were more than offset by decreases in the building categories, both residential and non-residential.

Total construction contracts in the United States (except Alaska and Hawaii) in February amounted to $2,239,534,000 down 3% from the same month last year, Dodge reported.

After adjustment for normal seasonal patterns, however, February construction contracts were at about the same level as in January, with the Dodge Index reported at 234 compared with 235 in January and 244 in December of last year (1947-49=100).

Heavy engineering contracts in February amounted to $554,456,000, up 5% from the corresponding month last year. Notable gains were scored in contracts for electric light and power systems and in highways.

Contracts for non-residential buildings dipped slightly in February, totalling $697,501,000, down 1% from a year ago. Activity in the non-residential sector was mixed, with declines in manufacturing buildings, schools, and hospitals offsetting impressive gains in most other non-residential building types.

Contracts for residential buildings in February amounted to $987,577,000, down 8% from February 1959. The number of dwelling units represented by the residential contracts totalled 76,114, down 11% from a year ago.

Cumulative totals for the first two months of 1960, with percentage changes from the corresponding period last year, were as follows: heavy engineering at $1,018,890,000, up 1%; non-residential building at $1,496,929,000, down 2%; residential building at $1,913,430,000, down 9%, and total construction, at $4,429,249,000, down 4%.

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Manufacturers of all types of Fully Automatic

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Daily output guaranteed according to the International Standard Specification:

150 ton high pressure pipes
300 ton flat and corrugated sheets

CANADIAN SPECIFICATIONS

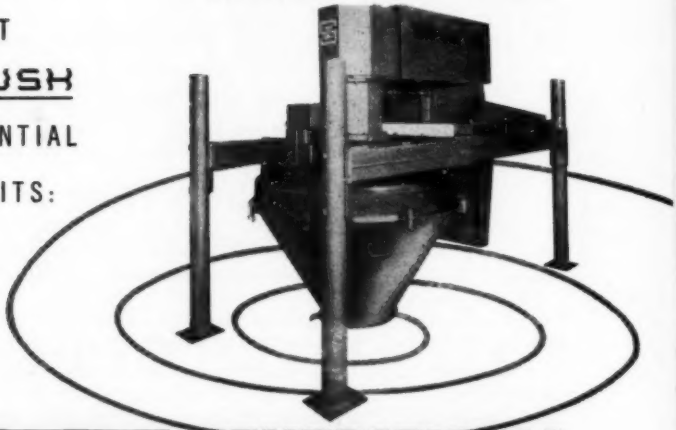
The list of Canadian Specifications has been revised as of January 4, 1960, and a copy can be obtained from the Secretary, Canadian Government Specifications Board, National Research Council, Ottawa 2, Canada, at 10¢ each (except otherwise noted).

The following Asbestos materials are included in the list:

34-GP-1a	Pipe; Asbestos-Cement, Pressure
34-GP-2a	Pipe; Asbestos-Cement, House Connection
34-GP-3a	Shingles; Asbestos-Cement, Roofing
34-GP-4a	Shingles; Asbestos-Cement, Siding
34-GP-5a	Sheets; Asbestos-Cement, Corrugated
34-GP-7a	Methods of Sampling and Testing Asbestos-Cement Products (20¢)
34-GP-8	Conduit; Asbestos-Cement, Electrical
34-GP-9b	Pipe; Asbestos-Cement, Sewer (15¢)
34-GP-10	Pipe; Asbestos-Cement, Industrial Vent
34-GP-11	Pipe; Asbestos-Cement, Flue
34-GP-12	Sheets; Asbestos-Cement, for Electrical Purposes
34-GP-13	Sheets; Asbestos-Cement, Dielectric
34-GP-14	Sheets; Asbestos-Cement, Flat, Decorative
34-GP-15a	Sheets; Asbestos-Cement, Flat, Flexible
34-GP-16a	Sheets; Asbestos-Cement, Flat, Fully Compressed
34-GP-17b	Sheets; Asbestos-Cement, Flat, Semi-Compressed
51-GP-1	Thermal Insulation, (Amosite) for Piping, Machinery and Boilers for Marine Use
51-GP-2	Thermal Insulation (Calcium Silicate-Asbestos) for Piping, Machinery and Boilers for Marine Use
51-GP-3	Thermal Insulation (85% Magnesia) for Piping Machinery and Boilers for Marine Use
51-GP-4	Thermal Insulation (Diatomaceous Silica-Asbestos) for Piping, Machinery and Boilers for Marine Use (15¢)
51-GP-5	Thermal Insulation, Back-Up

Series 40 Entoleter CentriMil® has capacity in excess of 20 tons per hour when releasing crudy, or fiberizing 6 tons per hour.

DON'T
CRUSH
POTENTIAL
PROFITS:



MODERN CENTRIFUGAL IMPACT MILLING

- Reduces rock, releasing fiber intact
- Has increased yield as much as 15%
- Boosts both value and volume of output
- Requires less power per ton
- Constant product from start-up to shut-down

The rugged Entoleter® Centrifugal Impact Mill is specially engineered to break open rock along natural cleavage lines liberating crudy asbestos with minimum degradation of fiber. Its superiority over conventional methods has been production proven.

The same impact principle at higher velocities is used for fiberizing without degradation. Write for details. *Free* sample processing is available in the Entoleter Development Laboratory.

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IN CANADA: LYNN, MACLEOD ENGINEERING SUPPLIES, LTD., THETFORD MINES, P. O., CANADA

51-GP-6 Cement; Insulating (15¢)
51-GP-7 Cement; Finishing
51-GP-8 Asbestos Cloth and Twine for Use with Thermal Insulation (15¢)

Also included in this list is the following publication: Specification and Drawings for Quebec Standard Asbestos Testing Machine Model No. 2 1938—No. 3470 ($25.00).

Movie-goers and TV viewers across the country will soon be able to see Thetford Mines asbestos producers in shots of local mines and mining techniques in a film called "*The Magic Mineral*".

Premiere showing of the 12-minute film, held November 12, 1959, was in Thetford's Parish Centre.

The film was shot on location by a National Film Board crew at Bell Asbestos Mines, Johnson's Company and Asbestos Corporation properties. Highlight of the movie is a spectacular shot from the top of the King-Beaver Mine tailings pile at dusk. By arrangement with municipal authorities, the city lights were turned on all at once during the filming of this scene.

Chairman of the National Film Board is Guy Roberge, a former Thetford resident, whose ambition it has been to have a film made about his hometown.

AUTOMOBILE SALES

	January 1960
Passenger Cars	676,712
Motor Trucks	115,268
Motor Coaches	371
	792,351

In January 1959, a total of 635,664 motor vehicles were sold. In the year of 1959 the total was 6,728,644.

These figures were supplied by the Automobile Manufacturers Association, New Center Building, Detroit, Mich.

ITALY

PIEMONTE — (Valle Varaita)

A NEW ASBESTOS MINE

(MINING LICENCE "AURIOL,,)

CHRYSOTILE FIBRES

Long

Medium

Short

Microfibres

Powders

Licensee:

MINERARIA VAL VARAITA S. p. A.

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TORINO (Italy)

AUTOMOBILE FACTS AND FIGURES

In 1959, more cars and trucks moved more miles over America's growing street and highway network than in any previous year. A record 70.4 million motor vehicles traveled nearly 700 billion miles. In many other ways too it was a big and busy automotive year in which motor transportation played a greater-than-ever role in the life of the American people.

In a nutshell, this is the story told by the 1960 edition of AUTOMOBILE FACTS AND FIGURES, statistical yearbook published by the Automobile Manufacturers Association. This 39th edition, just released, contains more than 70 pages of charts, tables and indexes, covering production, employment, factory sales, vehicle registrations, traffic safety, car ownership and use, automotive taxes, and highway statistics.

Following are a few highlights—Motor vehicle factory sales in 1959 totalled 6,728,644 units, including 5,591,243 passenger cars, 1,137,401 trucks and motor coaches. These automotive products had a combined wholesale value of $12,880,000,000. Replacement parts sales totaled $2.2 billion.

More than 175 million motor vehicles have been produced in the U.S. since the industry's birth in 1896.

Nearly three out of four families own automobiles. Multi-car households have increased 67% in five years. More than 18% of car-owning families or 13.5% of all families now own two or more automobiles.

The automobile is the leading passenger transporter in the U.S., handling 89% of all intercity travel.

Of the 81.5 million drivers in the U.S., 38.2% are women. A survey of car use by women drivers shows that nearly half use their cars on a daily basis.

Taxes take 21 cents of the automotive retail sales dollar. Special highway-user taxes in 1959 climbed to a record $9.3 billion. Trucks alone paid $2.7 billion.

One out of every six business firms in the U.S. is in the automotive field. One out of every seven employed persons works in a highway transport industry—a total of 10.4 million automotive jobs.

U.S. automotive companies have a total of about 1.7 million stockholders.

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If your problem is . . .

FINISH
DRAINAGE
STABILITY
UNIFORMITY
LONG LIFE

or PERFORMANCE generally

use

Albany DURASORB Felts

Ask your Albany Felt Sales Engineer about the new recommended shower-suction box arrangement for maximum felt cleaning. He can supply you with important information and machine diagrams which will be very helpful.

AF

ALBANY FELT COMPANY
ALBANY, N. Y.

Talk it over with your Albany Felt Sales Engineer

FLINTKOTE ACQUISITION

I. J. Harvey, Jr., Chairman of the Board and chief executive officer of The Flintkote Company, New York City, and Bruce S. Campbell, Sr., Chairman of the Board of Harry T. Campbell Sons' Corporation, Baltimore, Maryland, announced that an understanding had been reached between the representatives of the Campbell common stockholders and Flintkote providing for a pooling of the interests of the two companies.

The Harry T. Campbell Sons' Corporation, a quarrying, manufacturing and contracting firm founded in 1892, along with its subsidiaries, operates 21 plants and quarries in 13 locations on the eastern seaboard.

The Flintkote Company has been actively engaged in a planned program of expansion and diversification and Mr. Harvey pointed out that the acquisition of the Campbell Corporation would add materially to the Company's reserves of non-metallic mineral resources with which to supply the construction industry.

Messrs. Harvey and Campbell stated that under this arrangement it is contemplated that the Campbell Corporation and its subsidiaries will continue to be operated in their present corporate forms and with no change in the management or personnel.

A Reference Table for Engineers and other Executives in Wall Chart form has been published by PRECISION EQUIPMENT COMPANY. This Conversion Chart is amazingly useful for engineers, shop men and other executives.

Included are common conversions such as inches to centimeters or watts to H.P. as well as many conversions that are difficult to locate in reference manuals. (Some such examples are atmospheres to Kgs/sq. cm, cm/sec to miles/hr, cu. ft. to liters, microns to meters, quintal to lbs., etc.)

For your free Wall Chart of Conversion Factors, write Precision Equipment Company, 4411E Ravenswood Avenue, Chicago 40, Illinois.

All that the name implies

HUYTUF

NEEDLED FELTS

- Last longer
- Start faster
- Increase production
- Improve product quality
- Lower felt cost
- Make optimum use of synthetics

For the complete story talk to your Man-from-Huyck or write us today.

Huyck Felt Co.,
Rensselaer, N. Y.;
Aliceville, Ala.;
Division of F. C. Huyck & Sons
In Canada: Kenwood Mills Ltd.,
Arnprior, Ontario.

NEW HUYCK FELTS

★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870

The ASBESTOS TEXTILE INSTITUTE held its first quarterly meeting for 1960 at the Hotel Warwick, Philadelphia, on March 3 and 4, 1960. On March 3rd, the Air Hygiene and Manufacturing Committee, the Sales Promotion Committee, the Technical Committee and the Fiber Testing Committee met for discussion of problems related to their particular interests. The General meeting was held on March 4, and under the Presidency of Mr. J. T. Griffis, Vice-President, H. K. Porter Company, an excellent program was presented.

During the course of the meeting it was announced that the United States Rubber Company had been elected to membership in the Institute. Representing that Company at this meeting were Mr. H. E. Sunbury, Mr. S. J. Peele and Mr. Austin, and a welcome to membership was extended that company through these representatives.

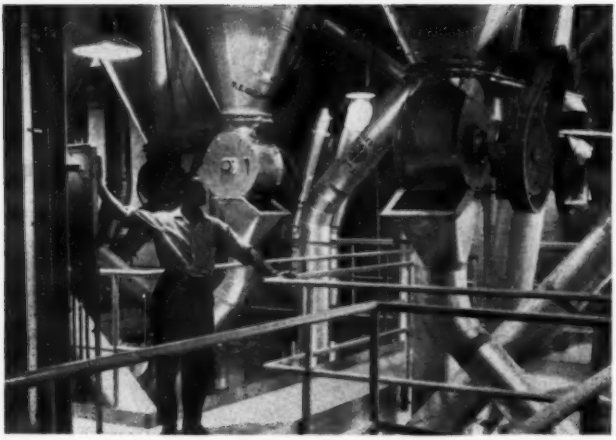
The June meeting of the Institute will be held in the Thetford-Asbestos area of Canada and tentative plans for this meeting were announced.

Bulletin P-33, describing the Company's new No. 564 Pressure Feeder, is now available from THE BAUER BROS. CO., Springfield, Ohio.

Diagrams show how the feeder is used to load bulky material of low density, or extremely wet materials, into continuous screw presses under pressure. This force feeding greatly increases press capacity and versatility.

The unit can also be used separately for various low pressure washing and thickening operations involving fibrous materials. The bulletin includes data on typical applications, operation of the unit and its advantages in force feeding.

CORRECTION—In the article on page 29 in the February 1960 issue of "ASBESTOS", entitled "Robert A. Keasbey Company, 75th Anniversary", second paragraph, first line, should read—"Briefly told—in 1885" instead of "1855".



Established source, volume source, independent source of proven-quality chrysotile asbestos fibre

With an annual productive capacity of 100,000 tons of high grade asbestos, Lake Asbestos of Quebec is an established supplier of high grade asbestos for world wide use. Write for information to Asarco International Corporation, 120 Broadway, New York 5, N.Y., distributor for LAQ.

Overseas Sales Agents:

ARGENTINA
(for Argentina, Uruguay)
Ladislao Koh, Buenos Aires

AUSTRALIA
Mount Isa Mines Ltd., Sydney

BRAZIL
"Brasimet" Comercio e Industria S. A.,
Rio De Janeiro, Sao Paulo

CHILE
Agencies Kapel Ltda., Santiago

COLOMBIA
Holanda Colombia, S. A.,
Barranquilla

ENGLAND
(for U. K., Spain, Portugal)
Metal Traders Ltd.,
Asbestos Division, London

FRANCE
Dieppedalle & Soilles, Paris

HOLLAND
(for The Netherlands, Belgium, Switzerland)
Keyser and Mackay,
Amsterdam

ITALY
Amianto Del Lago, Torino

JAPAN
C. Itoh Co., Ltd., Tokyo

NORWAY
Astrup & Son, Oslo

SWEDEN
Aktiebolaget
Ingeniorsfirman Titan,
Stockholm

WEST GERMANY
(for W. Germany, Austria)
Atlanta Bauer & Co., Bremen

ASARCO

LAKE ASBESTOS OF QUEBEC, LTD.
a subsidiary of American Smelting and Refining Company

AFRICA (Rhodesia)

(Published by Rhodesia Chamber of Mines)

Tons 2,000 lbs.

Production for November 1959	10,431.74
Valued at	£596,457.00
Production for November 1958	9,875.67
Valued at	£657,015.00

CANADA

(Dept. of Mines, Province of Quebec)

Tons 2,000 lbs.

Production for January 1960 (Quebec)	59,739
Other Provinces	5,842
	65,581

Total production for January 1959 was 54,703 tons.

By Grades:

	Year 1958	Year 1959
Crudes	574	355
Fibres	290,864	346,295
Shorts	582,166	645,681
	873,604	992,331

UNION OF SOUTH AFRICA

(Quarterly Information Report—Dept. of Mines)

Tons 2,000 lbs. 3rd Quarter (July, August & September 1959)

	Production	Local Sales		Exports	
	Tons	Tons	Value	Tons	Value
Amosite	19,051	118	£ 4,604	14,934	£ 718,706
Chrysotile	7,369	732	19,141	7,490	433,900
Cape Blue	17,103	567	41,825	12,605	970,768
Transvaal Blue	3,405	7	406	2,716	192,599
Tremolite	54	37	625	9	150
	46,982	1,461	£66,601	37,754	£2,316,123

BELL ASBESTOS MINES LTD.

THETFORD MINES, QUE.

CANADA

Producers of

Raw Asbestos Crudes

& Fibres

Sales Representatives

for

Cassiar Asbestos Corporation Limited

Imports Into U. S. A.

(Figures by Bureau of Census)

Unmanufactured Asbestos:	November 1959 Tons (2,240 lbs.)
From: Canada	40,310
Union of South Africa	4,313
Australia	1,805
Rhodesia (Ny)	381
Other Countries	69
	46,878
Valued at	$5,439,855

By Grades:			
Crude,	No. 2,	Chrysotile	3
Crude,	Other,	Chrysotile, U. of S. Africa	232
Crude,	Other,	Chrysotile, Rhodesia (Ny)	304
Crude,	Other,	Chrysotile, Other Countries	9
Crude,	Blue,	Australia	1,805
Crude,	Blue,	Union of South Africa	1,865
Crude,	Blue,	Other Countries	2
Crude,	Amosite,	Union of South Africa	2,145
Crude,	Amosite,	Rhodesia (Ny)	77
Crude,	Amosite,	Other Countries	7
Textile	Fiber,	Chrysotile, Canada	1,366
Textile	Fiber,	Chrysotile, Other Countries	48
Shingle	Fiber,	Chrysotile, Canada	4,959
Paper	Fiber,	Chrysotile, Canada	2,639
Other	Fibers,	Chrysotile, Canada	31,346
Other	Fibers,	Chrysotile, U. of S. Africa	71
			46,878

Manufactured Asbestos Goods:	November 1959 Quantity (lbs.)	Value
Asbestos Yarn, United Kingdom	17,513	12,489
Asbestos Yarn, Other Countries	28,346	17,514
Asbestos Packing	35,397	8,945
Asbestos Shingles (Impreg.)		
Canada	308,428	17,918
Belgium	90,442	13,992
Other Countries	2,616	475
Asbestos Shingles (Not Impreg.)		
Canada	241,362	15,309
Belgium	3,084,530	245,252

Italy	2,574,814	112,109
Other Countries	40,758	4,132
Asbestos Manufactures — Others	..	8,857
	6,424,206	456,992

IMPORTS OF ASBESTOS BY UNITED KINGDOM

Raw Materials

Tons 2,240 lbs.	Year 1959	January 1960
From: Union of South Africa	24,819	1,237
Basutoland, Bechuanaland & Swaziland	7,897	520
Rhodesia & Nyasaland	35,171	2,818
Canada	62,013	4,360
Other Commonwealth Countries & Irish Republic	1,589	134
Foreign Countries	1,993	317
	133,482	9,386

Exports From U.S.A.

(Figures by Bureau of Census)

Unmanufactured Asbestos:

	December 1959 Tons (2,240 lbs.)	Value
To: Europe	284	$ 60,809
South America	68	4,816
Canada	18	2,600
Other Countries	25	2,440
	395	$ 70,665

Manufactured Asbestos Goods:

	December 1959 Quantity	Value
Asbestos Cement & Pipe Coverings	Lbs. 306,397	$ 57,315
Asbestos Textiles & Yarn	Lbs. 57,753	77,555
Asbestos Packing	Lbs. 192,259	240,389
Asbestos Clutch Facings	No. 139,634	90,322
Asbestos Bk Lng (Mld.&S.Mld.)	Lin.Ft. 174,406	79,379
Asbestos Brake Lining, Other	Lbs. 446,044	366,976
Asbestos Construction Materials	Lbs. 973,448	137,877
Asbestos Manufactures — Others	..	73,981
		$1,123,794

Exports From Canada

(Published by Dominion Bureau of Statistics)

Unmanufactured Asbestos:	November 1959 Tons (2,000 lbs.)	Value
Crude		
United States	46	$ 36,361
United Kingdom	30	33,000
South America	..	..
Central America & Mexico	..	..
European Countries	3	2,187
Other Countries	4	4,030
	83	$ 75,578
Milled		
United States	10,805	$2,271,355
United Kingdom	1,864	371,244
South America	2,166	384,624
Central America & Mexico	746	132,653
European Countries	9,584	1,855,944
Other Countries	8,655	1,378,846
	33,820	$6,394,666
Shorts		
United States	34,131	$1,765,763
United Kingdom	2,864	140,427
South America	747	52,392
Central America & Mexico	125	10,139
European Countries	6,009	335,010
Other Countries	2,698	232,751
	46,574	$2,536,482
Grand Total— Unmanufactured Asbestos:	80,477	$9,006,726
Manufactured Asbestos Goods:		
Brake Lining		$ 49,987
Packing		..
Other Materials		33,086
		$ 83,073

WILHELM BURGDORF

Importer of **Raw Asbestos**

P. O. Box 1131, BREMEN, GERMANY

Exports From Canada

(Published by Dominion Bureau of Statistics)

Unmanufactured Asbestos:

	December 1959		Year 1959	
	Tons (2,000 lbs.)	Value	Tons (2,000 lbs.)	Value
Crude				
United States	..	$ ..	111	$ 97,685
United Kingdom ...	..	..	187	218,521
South America	..	..	..	..
Central America & Mexico	..	..	..	..
European Countries	12	12,242	94	86,257
Other Countries	8	7,440	24	23,778
	20	$ 19,646	416	$ 426,241
Milled				
United States	11,009	$ 2,156,366	145,667	$ 28,757,149
United Kingdom ...	3,405	773,441	32,043	7,052,135
South America	4,770	884,184	24,199	4,450,479
Central America & Mexico	869	166,058	7,302	1,305,890
European Countries	19,962	3,899,220	120,725	23,382,584
Other Countries	14,478	2,125,662	67,197	10,635,962
	54,493	$10,004,931	401,583	$ 76,375,853
Shorts				
United States	32,997	$ 1,806,166	483,453	$ 25,783,343
United Kingdom ...	4,644	239,792	37,004	1,858,057
South America	817	63,867	5,456	380,597
Central America & Mexico	139	11,086	1,657	106,681
European Countries	10,317	606,445	57,306	3,280,763
Other Countries	7,497	633,923	27,047	2,219,757
	56,411	$ 3,361,279	611,923	$ 33,629,198
Grand Total— Unmanufactured Asbestos:	110,924	$13,385,856	1,013,922	$110,431,292
Manufactured Asbestos Goods:				
Brake Lining		$ 66,163		$ 386,830
Packing		..		96
Other Materials		24,201		323,172
		$ 90,364		$ 710,098

NEWS OF THE INDUSTRY

HAPPY BIRTHDAY

Philip A. Meyer, President, Nicolet Asbestos Mines Limited, Norbestos, Quebec, Canada, and, Vice-President, Nicolet Industries, Inc., Florham Park, New Jersey, April 16.

Robert W. Weaver, Vice-President, Grant Wilson, Inc., Chicago, Illinois, April 16.

Joseph D. Francis, Secretary-Treasurer, Asbestos Products, Inc., St. Paul, Minnesota, April 17.

Lorne Bain, President, Asbestos Erectors of Canada, Limited, Montreal, P. Q., Canada, April 19.

George A. MacLellan, Managing Director, George MacLellan & Company, Glasgow, Scotland, April 19.

Alvan D. Simpson, President, Asbestos Erectors, Inc., Bound Brook, New Jersey, April 19.

Guy H. Montmartin, President, Alpine Mining Corporation, New York City, April 21.

H. J. Dowd, 1st Vice-President, Smith Asbestos Products, Inc., Millington, New Jersey, April 22.

John R. Skidmore, Secretary-Treasurer, Pacific Asbestos-Cement Products Corporation, San Bernardino, California, April 22.

H. B. Johnson, District Manager, The Philip Carey Manufacturing Company, Chicago, Illinois, April 23.

Joseph Matulicz, Partner, Amity Asbestos Associates, Brooklyn, New York, April 26.

Frank R. Hickory, President, Asbestos Products, Inc., St. Paul, Minnesota, April 27.

J. Carroll Johnston, President & Treasurer, Atlas Asbestos Company, North Wales, Pennsylvania, April 28.

Merlin W. Simon, Secretary, Sprinkmann Sons Corporation, Milwaukee, Wisconsin, April 30.

Richard H. Jaffer, President, York Insulation Company, Inc., Hillside, New Jersey, May 1.

Frank B. Kreider, Union Asbestos & Rubber Company, Bloomington, Illinois, May 2.

Guy George Gabrielson, Jr., President, Nicolet Industries, Inc., Florham Park, New Jersey, May 4.

R. G. Bennett, Roofing Manager, A. H. Bennett Company, Minneapolis, Minnesota, May 4.

Gerard A. Reynolds, Vice-President, Armor Products, Inc., New York City, May 4.

C. G. Dandrow, Vice-President, Johns-Manville Sales Corporation, New York City, May 12.

L. M. Cassidy, Director, Johns-Manville Corporation, New York City, May 13.

L. T. Bennett, Vice-President, A. H. Bennett Company, Minneapolis, Minnesota, May 14.

To all these gentlemen we extend congratulations and best wishes on the occasion of their birthdays.

THE PHILIP CAREY MFG. CO.

Annual Report

Operating results for The Philip Carey Manufacturing Company and subsidiaries in 1959 showed a substantial improvement over the previous year.

Net income increased to $3,306,331, from $2,031,754 a year earlier. The net income for 1959 was equivalent to $3.91 per share of common stock outstanding at the year end, compared with $2.39 in 1958. Sales were at a new high of $73,203,888, compared with $66,455,602 in 1958.

Carey's increased earnings for 1959 are attributable in substantial measure to the operations of the Carey-Canadian mine and mill, and to the greater integration made possible by its operation. During the year under review, additional Carey-mined fibre was used in the Company's United States and Canadian manufacturing plants for new products, and to replace fibre which had to be purchased from outside sources in previous years. The completion of this development, which was begun in 1954, marked a major forward step.

ASBESTOS TEXTILES

US RUBBER

are manufactured in our own modern plant at Stark Mills, Hogansville, Ga. Spinning and weaving operations are closely controlled for maximum uniformity in asbestos yarns, fabrics and tapes. Specialties developed to meet customers' requirements.

Write: Asbeston® Dept., Textile Division

UNITED STATES RUBBER COMPANY

1230 Avenue of the Americas, New York 20, N.Y.

RAYBESTOS-MANHATTAN, INC.

Annual Report

The Annual Report for 1959 of Raybestos-Manhattan, Inc. reported sales of $88,710,186, the highest in the Company's history, and showed an increase of 23% compared with 1958 sales of $72,260,257.

The 1959 net income was $3,904,723, or $6.19 per share, compared with 1958 net income of $1,902,018, or $3.01 per share. The capital stock outstanding was 630,600 shares in both years.

In addition, its wholly-owned Canadian subsidiary reported 1959 sales of $2,839,592, with net income of $139,549, or 22 cents per share, compared with 1958 sales of $2,333,449 and net income of $39,044, or 6 cents per share.

Quarterly dividends of 85 cents per share, or $3.40 for the year, were paid to stockholders in 1959 and 1958.

ASBESTOS STOCK QUOTATIONS

(These figures are compiled from the Commercial & Financial Chronicle. No guarantee as to their correctness.)

		March 1960		
	Par	Low	High	Last
American Brake Shoe	np	44½	50½	44½
Armstrong Cork (Com)	1	40½	44	41
Armstrong Cork (Pfd)	np	76	80½	78½
Asbestos Corporation	np	21½	25	24
Philip Carey	10	31	34⅝	31¾
Cassair Asbestos Corp.	np	10½	12⅞	12¾
Celotex (Com)	1	30	34⅜	32⅞
Celotex (Pfd)	20	17¾	18⅞	18½
Certain-Teed	1	12¾	13⅝	13
Fibreboard	np	38½	44¾	39
Flintkote (Com)	5	34	37½	37
Flintkote (Pfd)	np	82	84	84
Johns-Manville	5	47½	53⅞	53⅝
National Gypsum (Com)	1	52½	58¼	56½
National Gypsum (Pfd)	np	90	91½	91½
Porter, H. K.	100	90½	93	91½
Raybestos-Manhattan	np	63	69½	65
Ruberoid	1	38⅜	40¼	39⅝
Unarco	5	9½	12¼	9½
United Asbestos	1	$3.60	$4.00	$3.95
U. S. Gypsum (Com)	4	90	104½	98¼
U. S. Gypsum (Pfd)	100	148	155	153
U. S. Rubber (Com)	5	49¼	56⅞	53
U. S. Rubber (Pfd)	100	145¾	149¼	148½

RAW ASBESTOS DISTRIBUTORS

LIMITED

FOR CANADIAN, RHODESIAN
AND SOUTH AFRICAN ASBESTOS

ASBESTOS HOUSE • 77-79 FOUNTAIN ST. • MANCHESTER 2
ENGLAND

UNION ASBESTOS & RUBBER CO.

Annual Report

Sales and earnings of Union Asbestos & Rubber Company, Chicago, Illinois, improved in 1959, it was announced by Edwin E. Hokin, President.

Earnings for the year amounted to $121,288 compared with a loss in 1958 of $236,046. Sales rose to $10,199,512, a 12.7% increase over 1958 sales of $9,047,160.

UNIVERSAL ASBESTOS MFG. CO. LTD.

Annual Report

The 23rd Annual Report and Accounts of The Universal Asbestos Manufacturing Company Limited for the period September 29, 1958 to September 27, 1959, has recently been received.

Consolidated Profits for the year 1959, before taxation, amounted to £533,265, compared with £335,237 for the previous year.

CURRENT RANGE OF PRICE

As of April 10, 1960

ARIZONA—	Per Ton of 2,000 lbs., f.o.b. Globe, Arizona		
No. 1 Crude (soft)	$1,475.00	to	$1,800.00
No. 2 Crude (soft)	830.00	to	1,050.00
Group-3 (Filtering & Spinning)	350.00	to	450.00
Group-4 (Plastic & Filtration)	190.00	to	250.00
Group-5 (Plastic & Moulding)	125.00	to	177.00
Group-7 (Refuse & Shorts)	60.00	to	100.00

CANADA—	Per Ton 2,000 lbs. f.o.b. Mine Canadian Currency		
Group No. 1 (Crude No. 1)	$1,410.00	to	$1,475.00
Group No. 2 (Crude No. 2); Crude Run-of-Mine and Sundry	610.00	to	875.00
Group No. 3 (Spinning Fibre)	350.00	to	650.00
Group No. 4 (Shingle Fibre)	180.00	to	245.00
Group No. 5 (Paper)	120.00	to	150.00
Group No. 6 (Waste, Stucco or Plaster)	..		86.00
Group No. 7 (Refuse or Shorts)	40.00	to	80.00

VERMONT—Per ton of 2,000 lbs. f.o.b. Hyde Park or Morrisville, Vt.

Group No. 3 (Spinning & Filtering)	$ 353.00	to	$ 440.00
Group No. 4 (Shingle Fibre)	181.00	to	218.00
Group No. 5 (Paper Fibre)	120.00	to	142.00
Group No. 6 (Waste, Stucco or Plaster)	..		86.00
Group No. 7 (Refuse or Shorts)	41.00	to	75.00

Drastic reduction of heat loss with

PABCO PRECISION-MOLDED CALTEMP

a Calcium Silicate Insulation

When vapors or liquids are conveyed or held at temperatures up to 1900° F.—when equipment is operated to high heat levels—Pabco insulations cut heat losses to absolute minimums. "Precision-Molded" by a patented process, Pabco's Caltemp and 85% Magnesia pipe and block insulations control temperatures within close tolerances. For data on technical advantages, case histories, or engineering consultation, write . . . or call a Pabco insulation engineer.

INSULATION GUIDE

Temperature	Recommended Pabco Insulation
to 550° F.	85% Magnesia pipe covering • block • cement
to 1200° F.	Caltemp pipe covering • block • cement
to 1500° F.	Prasco 15 C pipe covering • block • cement
to 1900° F.	Prasco 19 C block

PABCO

INDUSTRIAL INSULATIONS DIVISION

Fibreboard Paper Products Corporation
San Francisco 19 • Chicago 54
Houston 4 • New York 16 • Los Angeles

Eugene S. Reed has been named Sales Manager of ROCKBESTOS WIRE & CABLE COMPANY, *Division of Cerro de Pasco Corporation*, it was announced by A. S. Basil, Vice President and General Manager.

As Sales Manager for Rockbestos, Mr. Reed will assume the responsibility of supervising the sales activities of the main company plant in New Haven, Connecticut, as well as branch offices in several cities throughout the country and two warehouses in Chicago and California.

A native of Iowa, Mr. Reed spent one year at the University of Dubuque and received his degree in Electrical Engineering at the University of Kansas in 1947.

John P. Kingman has joined the staff of ROCKBESTOS WIRE & CABLE COMPANY, *Division of Cerro de Pasco Corporation*, as Government Representative, with headquarters in Washington, D.C.

Mr. Kingman comes to Rockbestos with a background of Electrical Engineering at Rensselaer Polytechnic Institute and sales experience in the Wire and Cable Division of United States Rubber Company in New York and Washington.

John H. Cosmar has been appointed Sales Manager for the New England territory, it was recently announced by the ROCKBESTOS WIRE & CABLE COMPANY, *a division of the Cerro de Pasco Corporation*, one of the world's leading producers of non-ferrous metals.

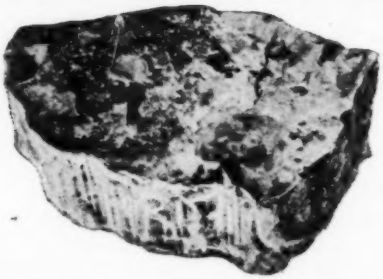
Mr. Cosmar, a graduate of the University of Pennsylvania, will manage all of the sales in the New England States and those in a part of New York State.

F. D. Rupprecht has been elected a Vice-President of the ARMSTRONG CONTRACTING AND SUPPLY CORPORATION at the organization's annual meeting in Lancaster, Pennsylvania. Mr. Rupprecht, a graduate of Pennsylvania State University, joined the Company in July, 1940. He will continue as District Manager of the Corporation's Baltimore office, which serves the Baltimore, Washington and Richmond areas.

J. W. Liddell was re-elected President, **E. D. Ainslie, Jr.** of Philadelphia and **A. J. Stream** of Seattle, Vice-Presidents, and **E. W. Hines, Jr.,** Secretary-Treasurer.

The Corporation, a wholly owned subsidiary of the Armstrong Cork Company, was formed in 1958 to handle the Company's contracting operations, particularly in the field of insulations. It provides consultation for architects and engineers during the design and engineering stages of insulating projects, and assists them in selecting particular types of insulation for specific temperature ranges.

Built on a rock



Crude Asbestos is the rock on which B.B.A. is built. We use it to make everything for which asbestos is best, from yarns and cloths to all types of jointings and packings —and the world famous MINTEX friction materials and MINTEX Industrial Plastics.

Our factory leads in production; our Research Laboratories keep us at the head of development; Asbestos is our subject.

British Belting & Asbestos Ltd

CLECKHEATON YORKSHIRE ENGLAND

Alexander Rotelli, employed for 25 years by KEASBEY & MATTISON COMPANY, Ambler, Pennsylvania, manufacturers of asbestos, asphalt, and thermal insulating products, became eligible for the Company's long-service award, December 31, 1959.

A critical heart attack struck Mr. Rotelli at the end of a working day and prevented his attendance at the company-sponsored Quarter Century Club dinner, at which awards were presented to new club members by Robert R. Porter, K&M President and Chairman of the Board of Directors.

Convalescing at his home after a stay in the hospital, Mr. Rotelli was happy to be greeted by Mr. Porter, who visited with him and personally presented the firm's check and service citation.

John F. Heaney has been appointed as Sales Service Supervisor at KEASBEY & MATTISON COMPANY'S Perth Amboy, New Jersey, plant, it was announced by L. Z. Wilkins, Sales Service Division Manager at Ambler, Pennsylvania. Mr. Heaney joined K&M in September 1957.

Prior to his transfer to Perth Amboy in April 1959, Mr. Heaney was employed in the Company's New York district office. He has been in charge of customer service at Perth Amboy; and succeeds **J. R. Purtell,** who has been transferred to K&M St. Louis, as head of the Sales Service Department there.

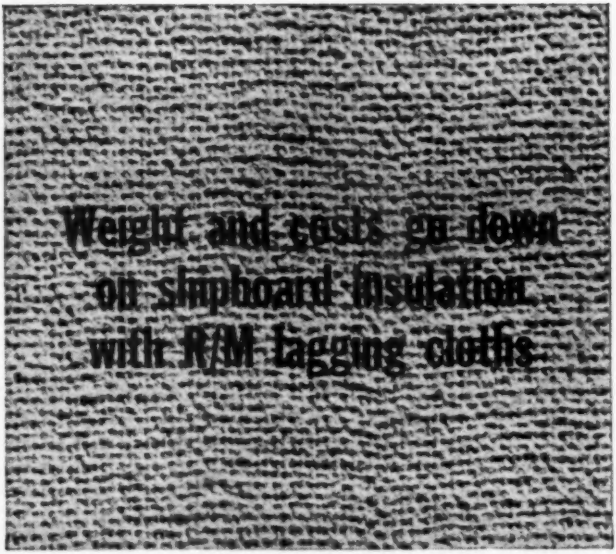
Kenneth F. MacLellan has been elected Chairman of the Board of Directors of UNION ASBESTOS & RUBBER COMPANY, Chicago, Illinois. This announcement was made shortly after his retirement as Chairman of United Biscuit Company of Amercia.

Mr. MacLellan will move into his new offices at UNARCO headquarters in Chicago on April 1st, 1960. He will continue as a Director of United Biscuit Company and is also a Director of Alco Products, George A. Fuller Construction Company and Manufacturers Trust Company, all of New York.

Edwin E. Hokin, President of Union Asbestos & Rubber Company, will continue as Chief Executive Officer of the Company.

James Coalter Crawford, Jr., a senior engineer of the JOHNS-MANVILLE CORPORATION, died at St. Barnabas Hospital for Chronic Diseases. He lived in White Plains, New York.

Mr. Crawford was graduated from Lehigh University's School of Mines in 1922, served for two years in Cuba with the Bethlehem Iron Company and joined Johns-Manville in 1924. He specialized in the development of insulating materials.



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Glassbestos® Style 32PO57 weighs only .57 lb. per sq. yd. It is a Grade AAA fabric having a minimum inorganic content of 95%. Maximum cotton content 5%.

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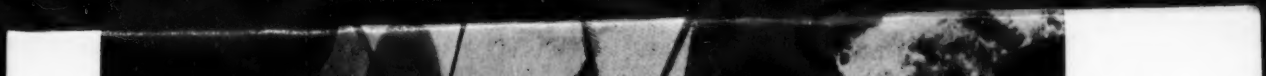
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